Reviewer’s report

Title: Dying comfortably in very old age with or without dementia in different care settings - a representative "older old" population study

Version: 0 Date: 20 Apr 2017

Reviewer: Klaus Hager

Reviewer’s report:

This is a very interesting paper about end of life care in very old, demented or non-demented people living at home or in care homes. It confirms things already known, but the study also contributes new knowledge concerning the final days of people with a median age of about 90 years of age. This paper also helps to improve the reputation of care homes concerning their ability to provide a comfortable setting for dying old people, with fewer transitions to a hospital.

Data about end of life care for people nearly 90 years or even older are still relatively scarce, especially with respect to their cognitive status and the setting where they died. Therefore the data merit publication.

The study was done in a small subsample of the CC75C, a prospective study, which was started in the 80ies. Meanwhile all study-participants have died. A strength of this study is the prospectively collected data from a representative population-based cohort. In some of the cases information was collected retrospectively (e.g. informant interviews and data from death certificates), which helped to clarify the quality of dying in a subgroup of the participants.

The relatively small number of participants, especially when dividing the sample further into demented or not demented subjects etc., "makes it difficult to fully examine all potentially relevant factors".

The median time between the participant's death and the informant interview was 2.3 years. This seems rather long for the informants to remember the symptoms of the participants in their last days of life, e.g. whether relief of the symptoms was provided and whether this was successful. To remember if someone died comfortably or not after 2 years is probably not easy for the informant, especially when those who died were demented. The authors discussed this and stated, that family informants' responses remained stable over time and that their own analyses found no impact on findings over interval variations.

One important result is that about half of the patients exposed three or more symptoms in their final days. The results are relevant for service planning to support very old people in their last days.

The subsample analysed is only a small part of the participants of the CC75C. Therefore, there may be concern that there is a selection bias with respect to the whole sample. But the authors state that the subsample broadly reflects the full representative cohort's demographics.
Another selection bias may be that only those participants were analysed, where there was an informant, who was willing to testify the end of life situation. Therefore, the authors should comment on their methods to get those informant interviews, if in all the cases of death the relatives were asked for an interview or how the interviews were planned as well as in which interval to the death the interviews were made (eg. min - max).

Despite high symptom prevalence when dying, death seemed comfortable for the majority of informants. Comfort was rated by the informants, by those who looked back 2.3 years. "Comfortable" may mean comfortable for the informants because a dying person was in a care home, because the informants wish to remember the death of their relative as comfortable, because death really seemed to be "comfortable" for the dying person or because of other things. It would be great if the authors could comment on their concept of a comfortable death too.

The paper is carefully written, the tables and figures are clear and easy to read.

The reviewer has no comments concerning language and style.

**Are the methods appropriate and well described?**
If not, please specify what is required in your comments to the authors.

No

**Does the work include the necessary controls?**
If not, please specify which controls are required in your comments to the authors.

Yes

**Are the conclusions drawn adequately supported by the data shown?**
If not, please explain in your comments to the authors.

Yes

**Are you able to assess any statistics in the manuscript or would you recommend an additional statistical review?**
If an additional statistical review is recommended, please specify what aspects require further assessment in your comments to the editors.

I am able to assess the statistics

**Quality of written English**
Please indicate the quality of language in the manuscript:

Acceptable

**Declaration of competing interests**
Please complete a declaration of competing interests, considering the following questions:
1. Have you in the past five years received reimbursements, fees, funding, or salary from an organisation that may in any way gain or lose financially from the publication of this manuscript, either now or in the future?

2. Do you hold any stocks or shares in an organisation that may in any way gain or lose financially from the publication of this manuscript, either now or in the future?

3. Do you hold or are you currently applying for any patents relating to the content of the manuscript?

4. Have you received reimbursements, fees, funding, or salary from an organization that holds or has applied for patents relating to the content of the manuscript?

5. Do you have any other financial competing interests?

6. Do you have any non-financial competing interests in relation to this paper?

If you can answer no to all of the above, write 'I declare that I have no competing interests' below. If your reply is yes to any, please give details below.

I declare that I have no competing interests

I agree to the open peer review policy of the journal. I understand that my name will be included on my report to the authors and, if the manuscript is accepted for publication, my named report including any attachments I upload will be posted on the website along with the authors' responses. I agree for my report to be made available under an Open Access Creative Commons CC-BY license (http://creativecommons.org/licenses/by/4.0/). I understand that any comments which I do not wish to be included in my named report can be included as confidential comments to the editors, which will not be published.

I agree to the open peer review policy of the journal